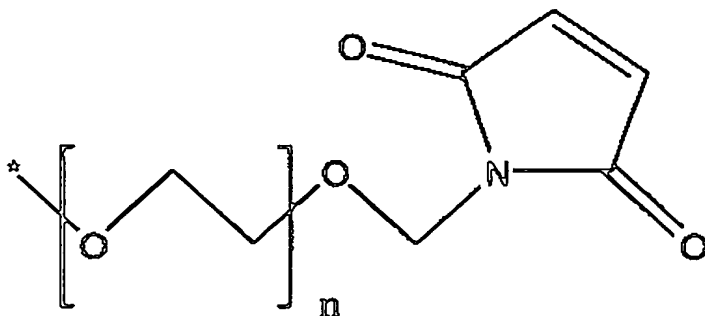


WHAT IS CLAIMED IS:

1. A maleimide group-containing crosslinked polymer particle, the crosslinked polymer particle comprising a group represented by the following formula (1):

Formula (1)



wherein in formula (1), n denotes an integer of 1 or more.

2. A maleimide group-containing crosslinked polymer particle according to claim 1, wherein the component of the crosslinked polymer particle is a crosslinked polymer particle having an acrylate polymer or a methacrylate polymer.

3. A maleimide group-containing crosslinked polymer particle according to claim 1, wherein n in formula (1) is 2 or more.

4. A maleimide group-containing crosslinked polymer particle according to claim 1, wherein n in formula (1) is 4 or more.

5. A maleimide group-containing crosslinked polymer particle according to claim 1, wherein the polymer particle

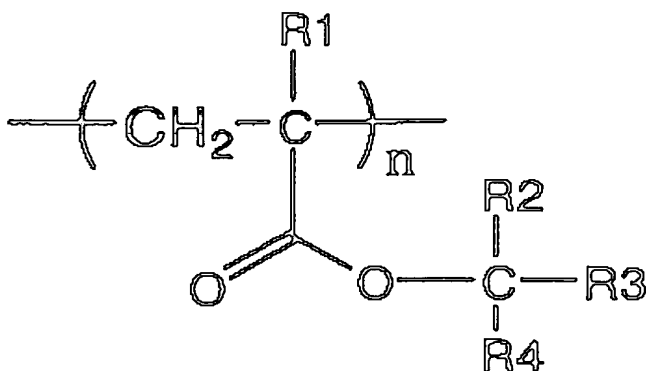
contains the maleimide group in an amount of 0.4 mmol/g or more.

6. A maleimide group-containing crosslinked polymer particle according to claim 1, wherein the polymer particle contains the maleimide group in an amount of 0.5 mmol/g or more.

7. A maleimide group-containing crosslinked polymer particle according to claim 1, wherein the polymer particle contains the maleimide group in an amount of 0.6 mmol/g or more.

8. A maleimide group-containing crosslinked polymer particle according to claim 2, wherein the (meth)acrylate polymer is represented by the following formula (2):

Formula (2)



wherein in formula (2), R1 represents a hydrogen atom or a methyl group; R2 to R4, which may be the same or different, respectively represent a substituted or unsubstituted alkyl group having 1 to 12 carbon atoms or a substituted or unsubstituted aryl group; and n denotes an integer of 1 or more.

9. A maleimide group-containing crosslinked polymer

particle according to claim 8, wherein the (meth)acrylate polymer represented by formula (2) is a polymer formed of at least one monomer selected from the group consisting of t-butyl acrylate, t-butyl methacrylate, 1,1-dimethylpropyl acrylate, 1,1-dimethylpropyl methacrylate, 1,1,2-trimethylpropyl acrylate, 1,1,2-trimethylpropyl methacrylate, 1,1-diethylpropyl acrylate, 1,1-diethylpropyl methacrylate, 1,1-dimethylhexyl acrylate, 1,1-dimethylhexyl methacrylate, 1-methyl-1-phenylethyl acrylate and 1-methyl-1-phenylethyl methacrylate.

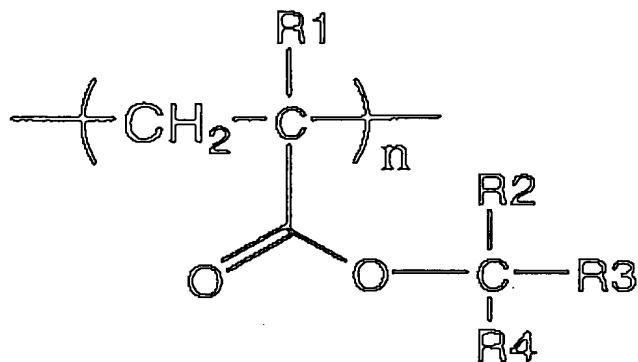
10. A maleimide group-containing crosslinked polymer particle according to claim 9, wherein the crosslinked polymer particle is a copolymer of the monomer and a monomer having at least one crosslinking ability and selected from the group consisting of divinylbenzene, ethylene glycol diacrylate, ethylene glycol dimethacrylate, diethylene glycol diacrylate, diethylene glycol dimethacrylate, glycidyl acrylate, glycidyl methacrylate, 2-([1'-methylpropilideneamino]carboxyamino)ethyl acrylate and 2-([1'-methylpropilideneamino]carboxyamino)ethyl methacrylate.

11. A method of producing a maleimide group-containing crosslinked polymer particle, the method comprising reacting hydroxymethylmaleimide with a hydroxyl group-containing polymer particle into which ethylene glycol or polyethylene

glycol has been introduced.

12. A method of producing a maleimide group-containing crosslinked polymer particle according to claim 11, wherein the hydroxyl group-containing polymer particle is obtained by reacting a carboxyl group obtained by hydrolyzing a crosslinked polymer particle having, as its structural component, an acrylate polymer or a methacrylate polymer represented by the following formula (2) with the ethylene glycol or polyethylene glycol:

Formula (2)



wherein in formula (2), R₁ represents a hydrogen atom or a methyl group; R₂ to R₄, which may be the same or different, respectively represent a substituted or unsubstituted alkyl group having 1 to 12 carbon atoms or a substituted or unsubstituted aryl group; and n denotes an integer of 1 or more.

13. A method of producing a maleimide group-containing crosslinked polymer particle according to claim 12, wherein the hydroxyl group-containing polymer particle is obtained by

reacting a crosslinked polymer particle containing, as its structural component, the acrylate polymer or methacrylate polymer represented by formula (2) with ethylene glycol or polyethylene glycol, in the presence of a metal-containing ester exchange reaction catalyst.

14. A method of producing a maleimide group-containing crosslinked polymer particle according to claim 13, wherein the acrylate polymer or methacrylate polymer represented by formula (2) contains at least one of a t-butyl acrylate polymer and a t-butyl methacrylate polymer and the catalyst is titanium tetraalkoxide.

15. A method of producing a maleimide group-containing crosslinked polymer particle according to claim 12, wherein the (meth)acrylate polymer represented by formula (2) is formed of at least one monomer selected from the group consisting of t-butyl acrylate, t-butyl methacrylate, 1,1-dimethylpropyl acrylate, 1,1-dimethylpropyl methacrylate, 1,1,2-trimethylpropyl acrylate, 1,1,2-trimethylpropyl methacrylate, 1,1-diethylpropyl acrylate, 1,1-diethylpropyl methacrylate, 1,1-dimethylhexyl acrylate, 1,1-dimethylhexyl methacrylate, 1-methyl-1-phenylethyl acrylate and 1-methyl-1-phenylethyl methacrylate.

16. A method of producing a maleimide group-containing crosslinked polymer particle according to claim 15, wherein the crosslinked polymer particle is a copolymer of the monomer and

a monomer having at least one crosslinking ability and selected from the group consisting of divinylbenzene, ethylene glycol diacrylate, ethylene glycol dimethacrylate, diethylene glycol diacrylate, diethylene glycol dimethacrylate, glycidyl acrylate, glycidyl methacrylate, 2-([1'-methylpropilideneamino]carboxyamino)ethyl acrylate and 2-([1'-methylpropilideneamino]carboxyamino)ethyl methacrylate.